

**NOTES ON THE BIOLOGY OF SOME PANAMANIAN POMPILIDAE,
WITH A DESCRIPTION OF A COMMUNAL NEST
(HYMENOPTERA)**

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The large amount of work done by Evans (1966, 1973) on the taxonomy of the Central American spider wasps has made most pompilids in this region identifiable, at least to genus, although there are probably many species yet to be described. Very little is known about the biology of the neotropical pompilids. This is not a problem unique to these wasps, since knowledge of most groups of insects in the tropics is inadequate. In many cases a biologist making a study of a group must become a taxonomist as well.

The nest of *Auplopus esmeralda* (Banks) described below represents the second record of a communal pompilid nest. The first record was the nest of *Auplopus argentifrons* (F. Smith) (as *Paragenia*), described by F. X. Williams (1919) in the Philippines. The *argentifrons* nest consisted of about 24 cells tended by approximately eight females and was built in a bamboo stump.

The remainder of this paper contains behavioral notes on four species of spider wasps. Voucher specimens of wasps and prey have been deposited in the museum of the Department of Entomology, University of California at Davis.

Auplopus esmeralda (Banks). A nest was found on Barro Colorado Island in the Canal Zone on W. M. Wheeler 8 trail. It was first observed in August 1976 when four females were seen flying in and out of the base of a fallen *Scheelea* palm frond, 2 m south of the trail. The palm frond was examined at the island field station on September 22, 1976. At this time many of the adults had already emerged, and most cells were empty.

The nest consisted of 95 mud cells arranged in an elongate mass along the curved inner wall of the palm frond base (Fig. 1a, b). Each cell was ovoid with one flattened end, which usually contained the exit hole of the emerging wasp. The external dimensions of the cells were 13-16 mm by 10-11 mm (Fig. 1d). The cell walls were smooth and unlined inside and rough externally, 0.5-1.0 mm thick. The bottom of the cell was not completely covered with mud medially (Fig. 1c).

The cocoons were papery and ranged from pale yellow to dark brown

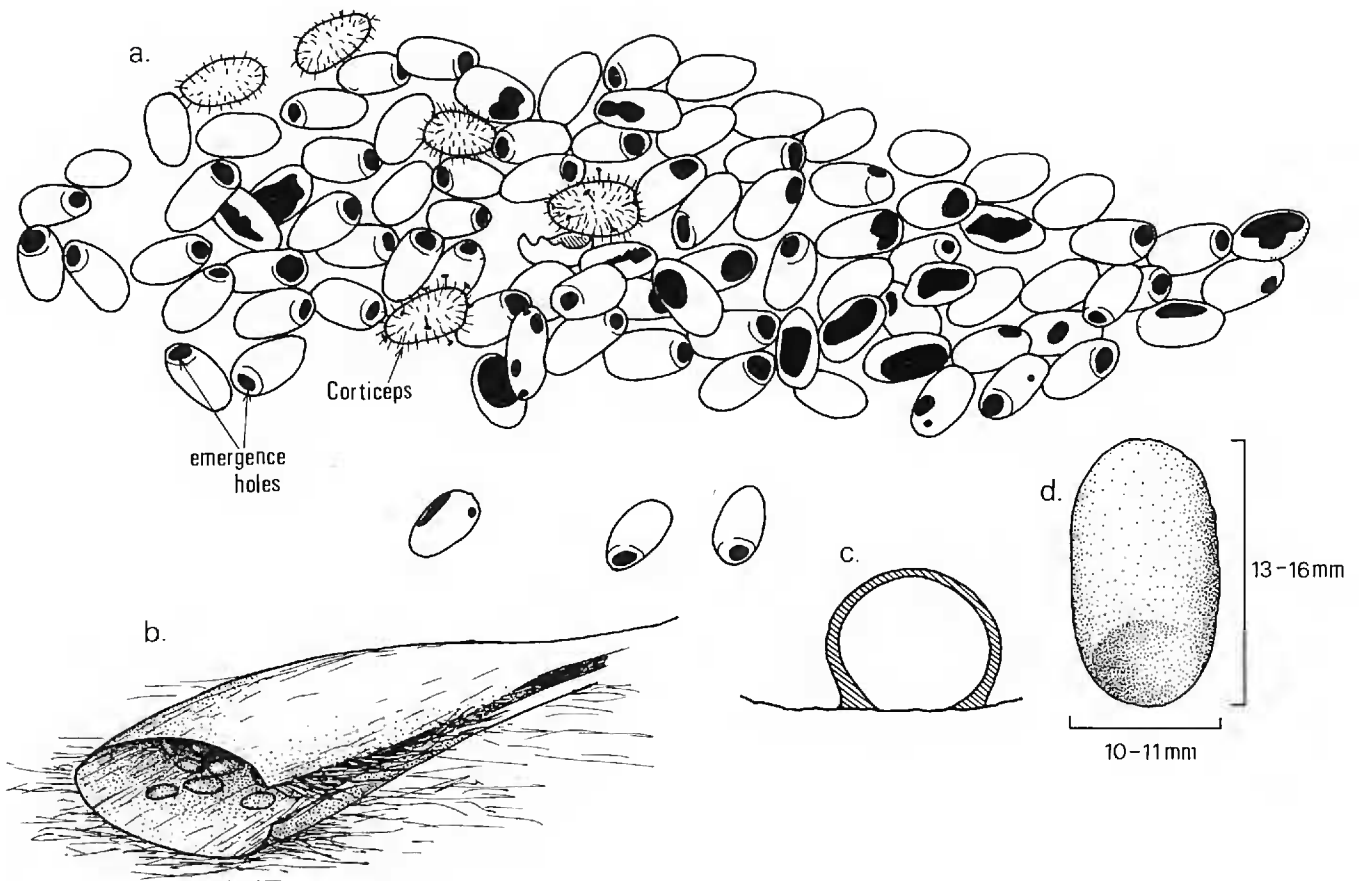


Fig. 1. Communal nest of *Auplopus esmeralda*: a, nest diagram; b, nest in situ; c, cross section of cell; d, dorsal view of cell.

depending on their age. Each cocoon was attached to the wall of the cell opposite the flattened end.

At least 18% of the cells in this nest were parasitized. Fungus accounted for at least five cells and two cells had well developed *Corticeps* fruiting bodies. Other parasites included one unidentified muscoid fly, and a female *Ephuta* sp. (Mutillidae) reared from one cell.

Two other nests of this species were collected from traps which were made from sections of 10 cm diameter bamboo cut with the joint walls forming end walls and a 1 cm diameter hole bored in the middle. One nest had three cells and three adult *Auplopus* were reared from these, one male and two females. The other nest consisted of two cells and two females were reared from these. The construction of these cells was the same as the cells in the palm frond.

Two females of this species were observed collecting mud from a *Nasutotermes* sp. termite nest on the side of a dead tree, one in July 1977 and the other in August 1978. Each female apparently secreted saliva on a small area on the mud wall of the termite nest. After wetting the material the female worked it with her mandibles into a ball almost the size of her head.

She flew away from the tree with the ball held beneath the mandibles, apparently supported with the palpi.

The following observations were also made on Barro Colorado Island:

Mystacagenia elegantula Evans. The type female was observed collecting mud from the same *Nasutotermes* nest as the *Auplopus* females.

Priochilus splendidulum splendidulum (Fabricius). A female was collected carrying a spider, *Ctenus* sp. (Ctenidae), along the top of a log. The spider's legs were not amputated.

Priocnemella rufothorax (Banks). One female was collected carrying the spider, *Acanthoctenus* sp. (Acanthoctenidae), in the leaf litter. The wasp had not amputated the spider's legs.

Ageniella anconis Banks. This female was collected while she was 'resting' on a blade of grass. She was carrying the spider, *Sarinda* sp. (Clubionidae) by the spinnerette and had not amputated the spider's legs.

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